TABLE 2.—*Clinical Features of Pyogenic Osteitis Pubis*

Prolonged, smoldering course is common
Local pain and tenderness without erythema or swelling are common (lack of local signs of infection)
Movement of hips causes pain
Obvious systemic signs of illness are often lacking
Prolonged intravenous drug abuse has typically preceded the illness
Previously recognized underlying disorders predisposing to infectious arthritis have not been present
Leukocyte count is usually normal, though the erythrocyte sedimentation rate is increased
Initial radiographs are frequently normal
Bacteremia is rare
Needle aspiration may be inadequate, thus necessitating bone biopsy
Pseudomonas aeruginosa is typically the responsible organism

from compression of the pelvis during examination or by lying on one's side. The emphasis of pain on hip motion may suggest a primary process involving the hip, diverting attention away from the actual site of involvement. Although pain may be less with gentle passive motion of the hip, sufficient pain may, nevertheless, be produced by minimal tension on the pubic symphysis created by this movement, reinforcing attention to the hip rather than the pubic symphysis.[2,12,20,21] This has also been recognized in cases of pyogenic sacroiliitis.[19] Additionally, pain referred to the suprapubic area may lead to investigation for a urinary tract pathologic process.[21] Temperatures and leukocyte count are typically normal or only minimally elevated. In all cases, however, the ESR has been increased. Therefore, localized musculoskeletal pain in a case of parenteral drug abuse and an increased ESR mandates an aggressive diagnostic investigation for osteomyelitis or infectious arthritis.

Initial radiographic studies of the pubic symphysis may be normal as exemplified by this case. Radionuclide bone scans, however, are usually positive at these times.[20,21] One exception has been reported.[20]

Blood cultures are often negative whereas cultures of aspirate or biopsy specimens from the pubic symphysis and adjacent bone usually show *P aeruginosa*. Biopsy is preferred because of its higher yield in fibrocartilaginous joints. Histologically, the process is a combined pyogenic arthritis and osteomyelitis of adjacent bone.

When *P aeruginosa* has been confirmed, treatment has included administering an aminoglycoside alone or in combination with carbenicillin or ticarcillin disodium.[20,21] It is unknown whether the addition of the latter antibiotics or open debridement[20] improves cure rates. Only four patients have been followed after hospital discharge and, in each case, after receiving antibiotics for four to six weeks without debridement, they had no evidence of recurrence.[21]

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Intraperitoneal Rupture of a Wilms' Tumor

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In 1943, in the *British Medical Journal*, Tanner[1] reported the case of a 6-year-old girl with abrupt and acute pain and tenderness of her abdomen from intraperitoneal rupture of a large Wilms' tumor. Because of her "hopeless condition," no resection was attempted and she died an hour after laparotomy. Our experience with a child of identical presentation shows the advances made in the past four decades in the management of this pediatric malignant tumor.

Report of a Case

A previously healthy 6-year-old girl was referred because of eight hours of severe abdominal pain and vomiting. There was no history of trauma. On examination she was acutely ill, clutching her abdomen and at times assuming a fetal position.

(Kosloske AM, McIver WJ, Duncan MH: Intraperitoneal rupture of a Wilms' tumor. West J Med 1985 May; 142:694-696)

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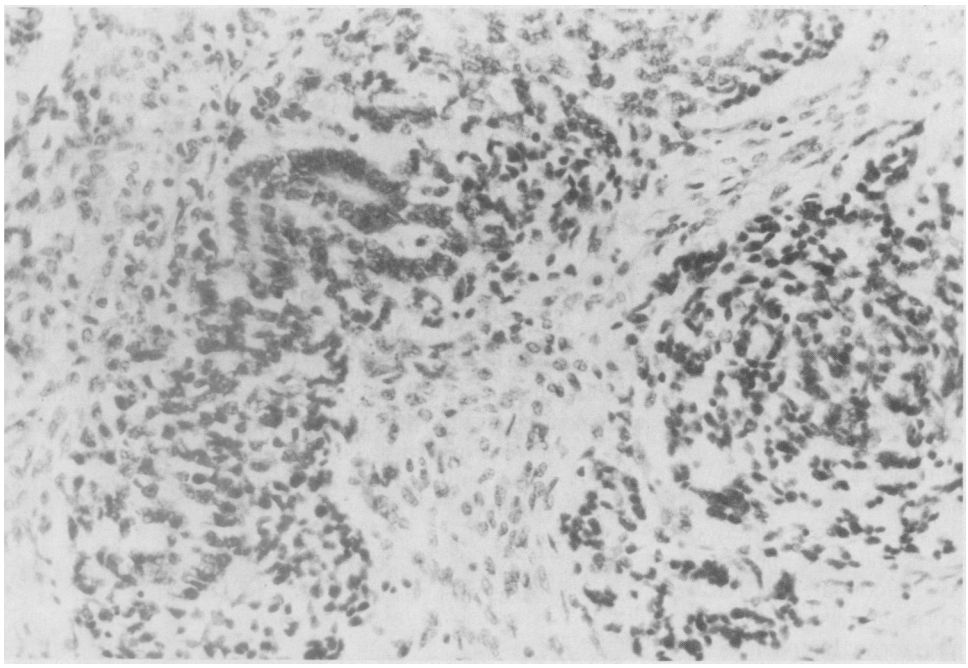

Figure 1.—Wilms' tumor, blastematous type, composed of immature mesenchymal and epithelial elements, with focal tubule formation (hematoxylin-eosin, × 250).

Her temperature was 37.8°C (100°F), pulse was 130 per minute, respirations 24 per minute and weight 19.5 kg (43 lb). The abdomen was slightly distended and very quiet. Guarding, tenderness and rigidity were present, particularly on the right. No mass was palpable. There was diffuse rectal tenderness. The leukocyte count was 16,000 per μl with a left shift.

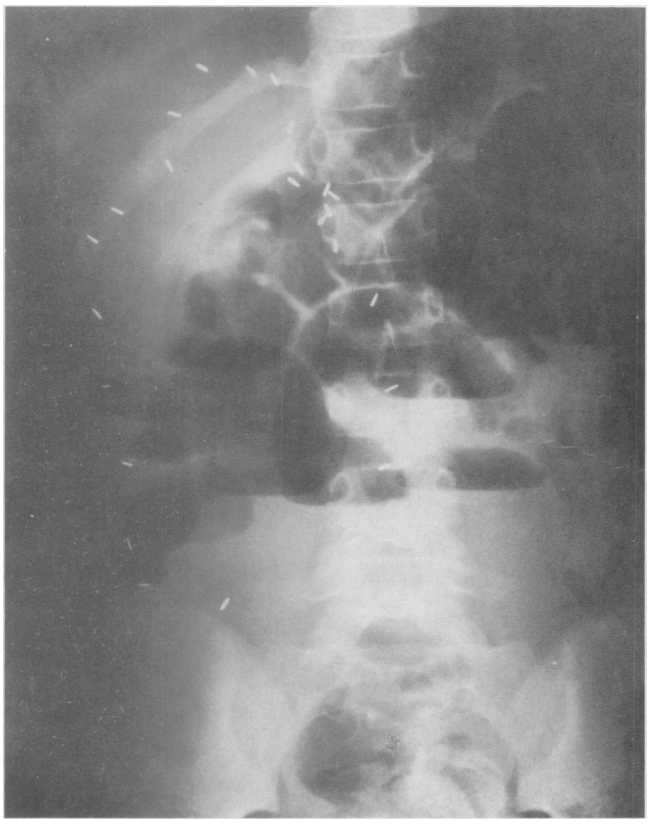

Figure 2.—Abdominal x-ray film, upright view, showing intestinal obstruction. Metallic clips outline the margins of the massive tumor removed 11 days earlier. (Intussusception was suspected because of the report of Cox and Martin,[3] in which 4 of 16 cases of postoperative intussusception occurred after operation for removal of a Wilms' tumor.)

A diagnosis of probable perforated appendicitis was made and she was prepared for operation. The operative findings were hemoperitoneum, a normal appendix and an enormous tumor of the right kidney, with blood oozing from the site of spontaneous rupture on its anterior surface. Complete exploration was carried out via a long incision. Although the tumor was large and almost encircled the inferior vena cava, there were no metastatic nodules. A radical right nephrectomy was done, with biopsy of periaortic lymph nodes, exploration of the left kidney, an appendectomy and clipping of the tumor bed. She remained stable throughout the operation, during which she received 900 ml of erythrocytes and 1,400 ml of plasma and electrolyte solutions.

The tumor measured 10 by 13 cm, weighed 451 grams and had replaced the right kidney. It was primarily solid but contained some cystic, hemorrhagic and necrotic areas. Microscopic examination showed a Wilms' tumor of favorable histology, but with capsular and vascular invasion (Figure 1). Because of infiltration of the adrenal lymphatics, it was classified as stage IV.[2]*

Postoperatively she received chemotherapy with dactinomycin (actinomycin D), 15 μg per kg per day for five days, and vincristine sulfate, 1.5 mg per m^2 weekly, and radiotherapy. An intestinal obstruction developed on the 11th postoperative day (Figure 2). An ileoileal intussusception was suspected and reduced at operation. She recovered uneventfully thereafter. Radiotherapy (total, 1,050 rads) was completed and intensive chemotherapy was continued for 14 months. The tumor did not recur. Two years after cessation of chemotherapy, she is well, with no evidence of recurrent or metastatic tumor.

*J. B. Beckwith, MD, Children's Orthopedic Hospital, Seattle, and Chief Pathologist, National Wilms' Tumor Study, examined the tissue slides and classified the tumor.

Discussion

Nephroblastoma (Wilms' tumor) is the most common retroperitoneal malignant tumor of childhood. The usual presentation (80% to 90%) is an abdominal mass, although about 25% of children have abdominal pain.[4] The pain may be due to acute hemorrhage within the tumor, sometimes after trivial trauma. Rapid expansion of the tumor may be associated with fever, leukocytosis and anemia. Abdominal tenderness and guarding may obscure palpation of the underlying mass and may mimic acute appendicitis.

Spontaneous rupture of a Wilms' tumor is rare. In an analysis of 606 patients with Wilms' tumor,[5] 3% showed preoperative rupture, a designation that included both chronic disruption of the capsule by tumor growth and acute rupture with hemorrhage.

Operative management of this condition, encountered unexpectedly, requires excellent anesthesia and surgical expertise in pediatric malignant tumors. The surgeon may wisely decide to do a biopsy, secure hemostasis and close the abdomen in anticipation of removing the tumor later. If the decision is to proceed, a definitive operation must be done, consisting of radical nephrectomy, periaortic lymph node sampling and direct examination of the opposite kidney. The margins of the tumor bed are marked for the radiotherapist, using small clips that do not produce artifacts on computed tomographic scans. These steps are essential for proper staging of Wilms' tumor, which guides subsequent chemotherapy and radiation therapy.[2,4,5]

Exact staging of Wilms' tumor is important because the prognosis has improved dramatically in the past four decades. In 1938 Ladd[6] reported the cases of 11 long-term survivors among 45 children treated for Wilms' tumor. All the survivors had an operation and some had postoperative irradiation. The effectiveness of dactinomycin therapy following surgical intervention for this neoplasm was recognized by Farber and co-workers[7] in the 1950s. The current prognosis for a patient with Wilms' tumor when treated by a protocol combining surgical procedure, irradiation and chemotherapy is excellent. In the second National Wilms' Tumor Study, the two-year survival for patients with tumor confined to the kidney (group I) was 95%. Group II and III patients with local tumor extension had an 84% to 90% survival. Group IV patients with metastasis at the time of diagnosis had a 54% survival at two years when treated by combination therapy.[2] Even with intraperitoneal rupture, Wilms' tumor today is far from a hopeless condition.

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